



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,048	03/23/2004	Sung-Kee Kim	5000-1-548	2705
33942	7590	04/10/2006	EXAMINER	
CHA & REITER, LLC 210 ROUTE 4 EAST STE 103 PARAMUS, NJ 07652			WAMSLEY, PATRICK G	
			ART UNIT	PAPER NUMBER
			2819	

DATE MAILED: 04/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary

Application No.

10/807,048

Applicant(s)

KIM ET AL.

Examiner

Patrick G. Wamsley

Art Unit

2819

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-12, 14-20 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Election of Species

This application contains claims directed to the following patentably distinct species:

- 1) A first embodiment depicted in Figure 7.
- 2) A second embodiment depicted in Figure 9.

The species are independent or distinct because they are mutually exclusive, describing different precoder structures having non-overlapping scope.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 16 appears generic to both species. Claims 1-12, 17, 19, and 20 appear readable on the first embodiment while claims 14 and 15 appear readable on the second embodiment. Claim 13 appears to be non-statutory and the status of claim 18 is unclear.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Drawings

The drawings are objected to because of the following informalities:

Fig. 8: Change "OutPut" to -- Output --.

Fig. 10: Change "OutPut" to -- Output --.

Art Unit: 2819

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the m stages of XOR gates must be shown or canceled from claim 18. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: claim 18, line 3.

The disclosure is objected to because of the following informalities:

Page 1, line 5: Letters are spaced unevenly on this line.

Page 1, line 14: Change "a parallel" to -- parallel --.

Page 2, line 1: Letters are spaced unevenly on this line.

Page 2, line 4: Change "10 terabits" to -- 8 terabits --.

Page 3, line 7: Change "carrier" to -- carrier wave --.

Page 3, line 22: Change "carrier" to -- carrier wave --.

Page 4, line 2: Change "2-level" to -- 3-level --.

Page 4, line 22: Change "inparallel" to -- in parallel --.

Page 5, line 3: Change "present" to -- present invention --.

Page 5, line 4: Change "exist" to -- exists --.

- Page 5, line 11: Change "present" to -- present invention --.
- Page 6, line 8: Change "a parallel" to -- parallel --.
- Page 6, line 11: Change "a parallel" to -- parallel --.
- Page 7, line 18: Change "logic al operations" to -- logical operations --.
- Page 7, line 20: Letters are spaced unevenly on this line.
- Page 8, line 7: Letters are spaced unevenly on this line.
- Page 8, line 12: Change "number 'n' of the input" to -- number N of the input --.
- Page 8, line 21: Change "a parallel" to -- parallel --.
- Page 9, line 2: Letters are spaced unevenly on this line.
- Page 9, line 15: Change "signal" to -- signals --.
- Page 10, line 2: Change "inputted signal" to -- signal output by the AND gate --.
- Page 10, line 3: Change "inputted signal" to -- AND output --.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

Claims 5, 6, 11, and 12 are objected to under 37 CFR 1.75 as being substantial duplicates of claims 3, 4, 9, and 10. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claims 1, 15, 17, and 20 are objected to because of the following informalities:

- Claim 1, line 2: Change "exist" to -- exists --.
- Claim 15, line 1: Change "the N is 4" to -- N is 4 --.

Art Unit: 2819

Claim 17, line 3: Change "exist" to -- exists --.

Claim 20, line 2: Change "is joined" to -- are joined --.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 13 is rejected under 35 U.S.C. 101 because a claim may neither preempt abstract ideas nor preempt every substantial practical application of an abstract idea because it would in practical effect be a patent on the judicial exceptions themselves. Even if a claimed invention recites a seeming practical application of a judicial exception, such as an encoding algorithm, the claim may not seek patent protection for every substantial practical application. Here, the equations of the algorithm are presented as pure Boolean algebra, with no reduction to a particular application.


Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,934,308 to Yonenaga et al displays a precoder [100: Fig. 6] having multiple XOR gates [110/130] coupled to a time-division multiplexer [210], having a pyramid configuration [Fig. 7] and a cascaded pattern [Fig. 8]. U.S. Patent 6,909,386 to Kim et al discloses a duobinary encoder having multiple XOR gates [Fig. 6]. U.S. Patent 6,623,188 to Dimmick et al provides a duobinary precoder [102: Fig. 1] using four XOR gates [462: Fig. 6]. U.S. Patent 6,595,707 to Kuwata discloses duobinary precoders [22-1/22-2: Fig. 2] having XOR gates [15].

Art Unit: 2819

U.S. Patent 6,542,276 to Laroia et al uses XOR gates [19/23: Fig. 6] in a dense wavelength division multiplexed [DWDM] system. U.S. Patent 6,522,438 to Mizuhara uses XOR gates [303a/303b: Fig. 3] for a duobinary modulation scheme. U.S. Patent 5,917,638 to Franck et al describes duobinary signal encoding. U.S. Patent 5,892,858 to Vaziri et al provides a duobinary encoding technique.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick G. Wamsley whose telephone number is (571) 272-1814. The official facsimile number is (571) 273-8300. An alternate facsimile number, (571) 273-1814, should only be used for unofficial documents.


Patrick G. Wamsley

April 5, 2006